Notes on Costa Rican Lauraceae with the Description of Several New Species

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ABSTRACT. Among recent collections from Costa Rica were several undescribed species. Two new species of *Pleurothyrium*, *P. guindonii* and *P. oblongum*, are described, recent collections of poorly known species of that genus are listed, and a key to the Costa Rican species of *Pleurothyrium* is presented. These additions bring the number of *Pleurothyrium* species known from Costa Rica to eight. Two new species of *Ocotea*, *O. rufescens* and *O. multiflora*, are also described and their affinities are discussed, at least as far as known. *Nectandra salvadorensis* Lundell is transferred to *Ocotea*. A reexamination of type specimens has led to a different concept of *Ocotea tonduzii* Standley and *O. pittieri* (Mez) van der Werff. Most specimens formerly placed in *O. pittieri* are now included in the new species *O. praetermissa*. The correct name for specimens placed in *O. tonduzii* can only be determined after a study of the *O. insularis* complex.

Pleurothyrium guindonii van der Werff, sp. nov.
TYPE: Costa Rica. Guanacaste: Cantón de Tilarán, 4–5 km NW of Monteverde, tree, 25 m, in pasture, *Haber, Guindon & Brenes 11089* (holotype, MO; isotypes, BM, CR, F, L, MEXU, NY, P, PMA, QRS, S, US, USJ). Figure 1.

Pleurothyrio immerso van der Werff simile, sed foliis apice obtusis, base angustatis, floribus majoribus et foliis supra punctis glandulosis destitutis recedit.

Trees, to 25 m. Twigs angular, appressed pubescent, the pubescence completely covering the young twigs, older twigs becoming glabrous and corky. Terminal buds densely appressed gray-pubescent. Leaves alternate, elliptic or obovate, 5–11 × 2–4.5 cm, the base attenuate or acute, apex obtuse or very shortly acuminate, the upper surface glabrous and not gland-dotted, lower surface glabrous or with some appressed hairs, especially along the midrib; lateral veins 5–7, immersed on both surfaces, arching upwards near margin, but not loop-connected, tertiary venation immersed, not obvious. Petioles 6–9 mm long, with a similar indument as twigs. Inflorescences in axils of deciduous bracts, 2.5–6 cm long, gray or brown pubescent, racemose or paniculate. Flowers greenish, 8–10 mm diam. Tepals 6, equal in size and shape, spreading to reflexed at anthesis, 3–4 mm long, outer surface puberulent, inner surface glabrous near the base, becoming papillose toward the tip, especially on the inner three tepals; stamens 9, 4-celled, anthers of the outer six stamens bent inward, those of the inner three stamens bent outward, the anther cells lateral; glands strongly enlarged, forming a wall surrounding the stamens, but usually not completely fused, the individual glands still recognizable; pistil glabrous, ovary globose, 2 mm long, style ca. 1 mm long; receptacle (sparsely) pubescent inside. Cupule deeply cup-shaped, with a few coarse lenticels, 1.5 cm high, usually split in three lobes, frequently dried glands and stamens present at rim of cupule; pedicel swollen in fruit; fruit ellipsoid, 3.5 × 1.7 cm.

Flowering: April.

Pleurothyrium guindonii can only be confused with *P. immersum* van der Werff. Both species have small leaves and rather short inflorescences, though they differ in several details. *Pleurothyrium guindonii* has obovate leaves with an attenuate-acute base and obtuse apex, the upper surface is not gland-dotted, the flowers are 8–10 mm diam., the inner surface of tepals is papillose toward the apex, and the ovary is glabrous, while *P. immersum* has elliptic leaves with an acute base and a distinctly acuminate apex, the upper surface is gland-dotted, the flowers are ca. 5 mm diam., the inner surface of the tepals is uniformly pubescent, and the ovary is also pubescent.

It is a pleasure to name this species after Carlos Guindon, who has made excellent collections of Lauraceae in the Monteverde Biological Reserve.

Paratypes. COSTA RICA. **Alajuela:** Cantón de San Ramón, Estación Río San Lorenzo, *Campos 63* (MO), Estación Río San Lorencito, *Morales et al. 1400* (MO).

Pleurothyrium oblongum van der Werff, sp. nov.
TYPE: Costa Rica. Cantón de Limón: San Rafael de Pandora, *Estrada 445* (holotype, INB; isotype, MO).

Inter congeneribus centrali-americanis foliis glabris, magnis venatione brochidodroma recedit.

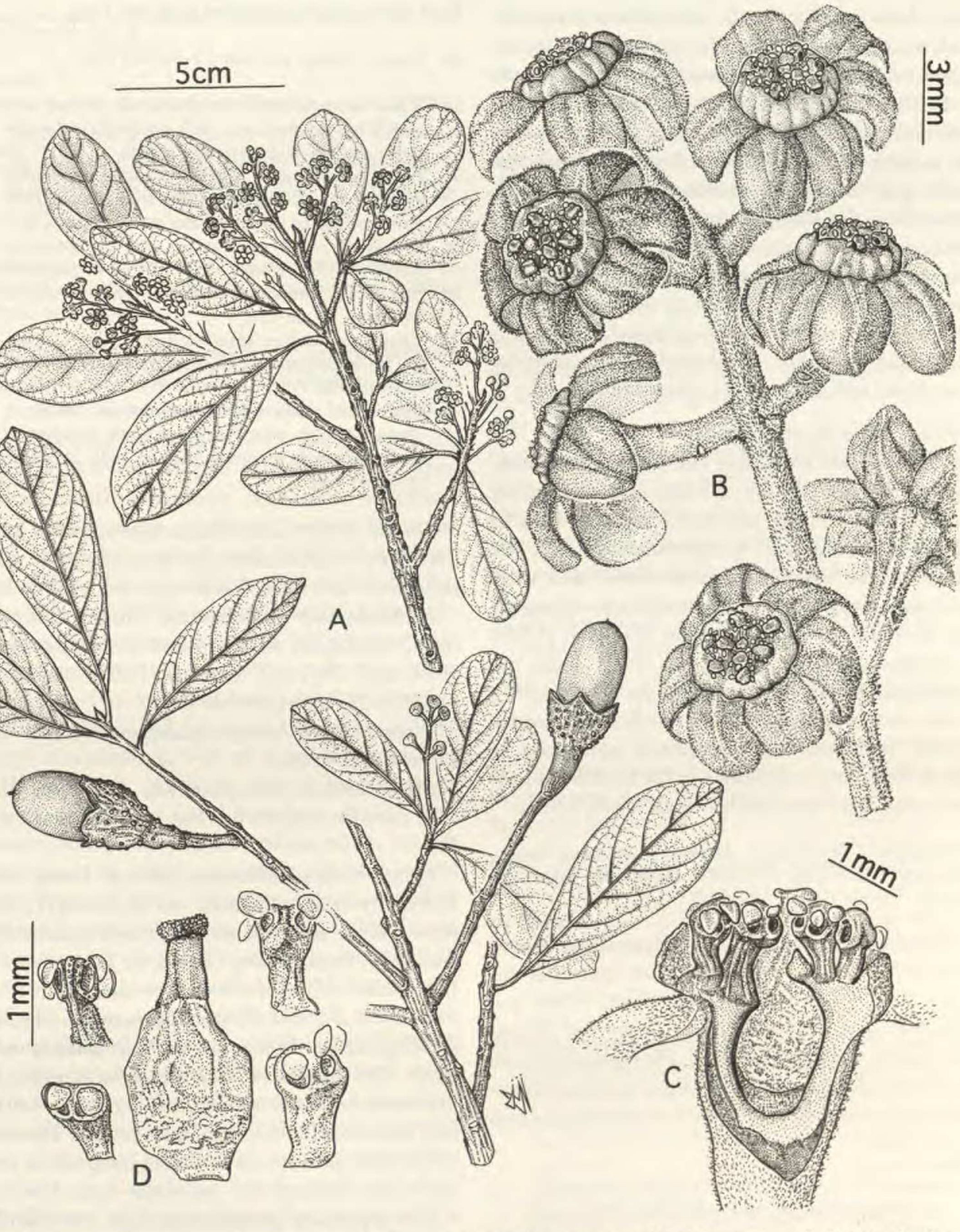

Figure 1. *Pleurothyrium guindonii* van der Werff. —A. Habit of flowering and fruiting twig. —B. Detail of inflorescence. —C. Flower in cross section. —D. Stamens and pistil.

Small tree, to 8 m tall. Twigs terete or slightly angular, glabrous or sparsely appressed pubescent, 7 mm diam. ca. 5 cm below the apex. Terminal buds appressed pubescent. Leaves alternate, chartaceous, 20–45 × 8–16 cm, oblong, or elliptic-oblong, glabrous on both surfaces, base rounded to obtuse, apex acuminate, acumen ca. 1 cm long, lateral veins ca. 20 (10–17 in Panamanian collection), near the margin united with a distinct marginal vein. Petioles 15–25 mm long, ca. 4 mm thick, glabrous. Inflorescence (detached) 12 cm long, very laxly branched, paniculate-cymose, minutely puberulous, more densely so toward the flowers, pedicels minutely puberulous, ca. 5 mm long. Flowers green, tepals 6, ca. 3 mm long, half-erect at anthesis, outer three tepals densely puberulous outside,

inner three with a small puberulous triangular patch near the base, otherwise glabrous, all tepals glabrous or nearly so on inner surface; stamens 9, all 4-celled, outer 6 stamens with anther bent inward and the locelli dorsal-lateral; filaments slender, as long as anthers, inner 3 stamens with the locelli extrorse-lateral; glands strongly enlarged, surrounding the stamens, but not fused, 3 staminodia present, minute, threadlike, as long as the glands; pistil 1.5 mm long, style short, 0.3 mm long, ovary gray-puberulous, except at very base, receptacle glabrous inside. Fruits ellipsoid, 2.5 × 1.5 cm, cupule shallowly cup-shaped, 1.5–2 cm wide, 1 cm high, with a few warty protuberances.

Flowers and fruits: August.

Pleurothyrium oblongum can be readily recognized by its large (20–45 cm long), glabrous, oblong leaves with a strongly developed marginal vein. It resembles somewhat *P. hexaglandulosum* van der Werff, but the latter has obovate leaves and short (to 5 mm long) petioles. *Pleurothyrium oblongum* was included in Burger and van der Werff (1990) as *Pleurothyrium* sp. A and was listed under the imperfectly known species in van der Werff (1993); it was then only known from the fruiting Proctor Cooper collection. *Pleurothyrium oblongum* is known from three collections in the Caribbean lowlands near the Panamanian–Costa Rican border.

Paratypes. COSTA RICA. **Limón:** near Puerto Vargas, *Holdridge 6336* (USJ). PANAMA. **Bocas del Toro:** Almirante, *Proctor Cooper* 539 (F, NY, US).

Because only four species of *Pleurothyrium* were included in the recent treatment of Lauraceae for Costa Rica (Burger & van der Werff, 1990) and only five species were included in the key to species in the recent revision of *Pleurothyrium* (van der Werff, 1993), a key to the eight species of *Pleurothyrium* currently known from Costa Rica is provided below.

1a. Lower leaf surface covered by a brown-tomentose or tomentellous indument, the leaf surface not visible . . . . . *P. palmanum*
1b. Lower leaf surface not completely covered by an indument, and always (partly) visible 2
2a. Lower leaf surface with erect hairs, the indument denser and tomentose along the midrib; twigs ferruginous-tomentellous . . . . . *P. pauciflorum*
2b. Lower leaf surface glabrous or with some appressed hairs; twigs appressed pubescent or, in *P. golfodulcense*, ± gray-tomentellous 3
3a. Leaf base rounded to rounded-cordate; submarginal vein strongly developed, thus venation brochidodromous; leaves 20–45 cm long 4
3b. Leaf base angustate, acute, or rarely obtuse; submarginal vein lacking or weakly developed; leaves generally less than 20 cm long 5
4a. Leaves obovate; petioles to 5 mm long . . . . . *P. hexaglandulosum*
4b. Leaves oblong; petioles 15–25 mm long . . . . . *P. oblongum*
5a. Tepals erect at anthesis; glands of stamens enlarged, but not forming a wall surrounding the stamens; anthers held above the glands . . . . *P. trianae*
5b. Tepals spreading or reflexed at anthesis; glands forming a wall enclosing the stamens; anthers about as tall as the glandular mass 6
6a. Bracts of inflorescence present at anthesis; leaves 10–20 cm long . . . . . *P. golfodulcense*
6b. Bracts of inflorescence absent at anthesis; leaves less than 11 cm long 7
7a. Upper leaf surface gland-dotted; leaves elliptic, the tip acuminate; tepals uniformly pubescent on inner surface . . . . . *P. immersum*
7b. Upper leaf surface not gland-dotted; leaves ± obovate, the tip obtuse or very shortly acuminate; inside of tepals glabrous in lower half, papillose in upper half . . . . . *P. guindonii*

Several of the Costa Rican species were known from only a few collections and of those, recent collections and their distribution are cited below.

Pleurothyrium golfodulcense Burger & Zamora: recent collections are *Herrera 4870, Chavarría 519, Marin 235, 397, 417, Zamora 1752, Thomsen 796, González 16,* and *Quesada 412.*

Pleurothyrium hexaglandulosum van der Werff: no new collections.

Pleurothyrium immersum van der Werff: *Marin 313,* from the Cantón de Osa, is the second collection.

Pleurothyrium palmanum (Mez & Donn. Smith) Rohwer: recent collections are *Bello 1277, 4015, 4050, 5214,* from Monteverde, and *Aguilar 1146* and *1173,* from Limón, Cantón de Talamanca, Alto Lari. *Bello 1277* was a 30-m tree. *Aguilar 1173* and *Guindon 3, 27,* and *42,* from Puntarenas, Cordillera de Tilarán, Sta. Elena, are the first fruiting collections. The cupule is shallowly bowl-shaped, with coarse warts on the outside, 1.8 cm diam., ca. 1 cm tall; fruit broadly ellipsoid, 2 × 1.5 cm. The recent collections have leaves to 15 cm long, and it seems likely that the type has unusually large leaves.

Pleurothyrium pauciflorum van der Werff & Hammel: three recent collections, *Herrera 4895* and *5006,* and *Aguilar 3131,* all from the Cantón de Osa. *Herrera 4895* was flowering in January, *Herrera 5006* in December, and *Aguilar 3131* in February.

Pleurothyrium trianae (Mez) Rohwer: two recent collections are *Hammel 18068* and *18257,* both from the Cantón de Osa. The collections from the Osa Peninsula are unusual in having inrolled leaf bases. Collections of this species from elsewhere (in Costa Rica, for example, *Zamora 1363* from Alajuela) do not have inrolled leaf bases. In other

characters the collections from the Cantón de Osa fit well in *P. trianae.*

Ocotea rufescens van der Werff, sp. nov. TYPE: Costa Rica. Prov. Limón: Cantón de Talamanca, Bratsi, Alto Lari, *Aguilar & Schmidt 1077* (holotype, MO; isotypes, BM, F, INB). Figure 2.

Ocoteae pharomachrosorum Gómez-Laurito affinis sed indumento rufescenti-tomentello paginae inferioris foliorum bene distincta.

Tree, to 25 m. Twigs terete or ridged, densely reddish brown tomentellous, the indument covering the surface completely. Terminal bud densely brown-tomentellous. Leaves alternate, chartaceous, 9–16 × 3.5–6 cm, elliptic or ovate-elliptic, apex acute or slightly acuminate, base acute or obtuse, upper surface shiny, glabrous, except for some curled hairs along midrib and basal lateral veins, lower surface densely reddish brown tomentellous, the surface completely covered, lateral veins 4–6, arching upwards near the margin, but not or scarcely loop-connected, these veins and reticulation slightly raised on upper surface, lateral and tertiary veins slightly raised on lower surface; petioles densely tomentellous, 1–2 cm long. Inflorescences in axils of bracts, rarely in axils of leaves, sometimes clustered near tip of branches, usually once cymosely branched. Flowers creamy-white, basally tomentellous, the tepals becoming glabrous toward the tip. Tepals 6, equal, the outer 3 glabrous inside, the inner 3 papillose inside, all with a slightly papillose margin, elliptic 2 mm long, spreading in older flowers; stamens 9, all 4-celled, the outer 6 with cells introrse and arranged in 2 rows, each with a small sterile tip, ca. 1 mm long, the filaments very short, inner 3 with cells extrorse lateral and 2 glands at the base of the filaments, ca. 1 mm long; staminodia 3, very small; top of the receptacle with a ring of hairs at insertion of stamens and tepals; receptacle deep, glabrous inside; pistil glabrous, ovary globose, as long as the style. Cupule small, shallowly bowl-shaped, ca. 8 mm wide; fruit ellipsoid, ca. 2 mm long.

Flowering: March.
Altitudinal range: 450–1400 m.

Paratypes. COSTA RICA. **Limón:** Talamanca, Bratsi, Alto Lari, *Aguilar & Schmidt 1134* (CR, INB, MO, USJ), *Herrera 5279* (CR, INB, MO).

Ocotea rufescens is the only *Ocotea* species in Costa Rica and Panama (where it is likely to occur as well) with a dense reddish brown tomentellous indument on twig and lower leaf surface. It is most closely related to *O. pharomachrosorum* Gómez-Laurito; the two species share characters such as the glabrous or papillose inner surface of the tepals, outer anthers with a sterile apical tip, raised reticulation on the upper leaf surface, dense indument on twig and lower leaf surface, the sometimes unequal leaf bases, and the tepals becoming glabrous toward their tips. *Nectandra salvadorensis* Lundell also has a raised reticulation on the upper leaf surface, dense indument on the lower leaf surface, glabrous or slightly papillose surface of tepals, and sometimes a small sterile tip of the outer stamens. Its inflorescences are not as densely pubescent as in the Costa Rican species, and hence its glabrescent tepals are not as obvious. Two other *Ocotea* species in Central America have the lower leaf surface completely covered with a tomentose or tomentellous indument, and a key to the species is provided below. Species with an appressed or sericeous indument are not included in the key.

1a. Petioles distinct, at least 1 cm long; leaf blades without vernation lines 2
1b. Petioles lacking, inrolled leaf bases decurrent to the base of the apparent petiole; vernation lines clearly visible on lower leaf surface . . . . . *O. calophylla* Mez
2a. Leaf base distinctly inrolled . . . . . *O. salvinii* Mez
2b. Leaf base plane, not inrolled 3
3a. Lower leaf surface and twigs gray tomentellous . . . . . *O. pharomachrosorum*
3b. Lower leaf surface (reddish) brown tomentellous 4
4a. Inner surface of tepals densely pubescent, the indument completely covering the surface, at least in the basal half of the tepals; tomentellous indument of inflorescence and leaves mostly erect . . . . . *Ocotea* sp. (Honduras)
4b. Inner surface of tepals glabrous or with some scattered hairs; tomentellous indument of inflorescence and leaves erect or ± appressed 5
5a. Twigs initially tomentellous, but soon glabrescent; indument on leaves and inflorescences ± appressed . . . . . *O. salvadorensis*
5b. Indument on twigs persistent; leaves and inflorescences with predominantly erect tomentellous indument . . . . . *O. rufescens*

Included in the key is an undescribed species related to *O. salvadorensis* from cloud forests in Honduras.

A new combination is needed for the use of *Ocotea salvadorensis.* Rohwer (1986) provisionally included this species in *Ocotea* but did not make the new combination. It cannot be placed in *Phoebe* or *Cinnamomum* because its tepals are spreading at anthesis, and it lacks domatia and tripliveined leaves.

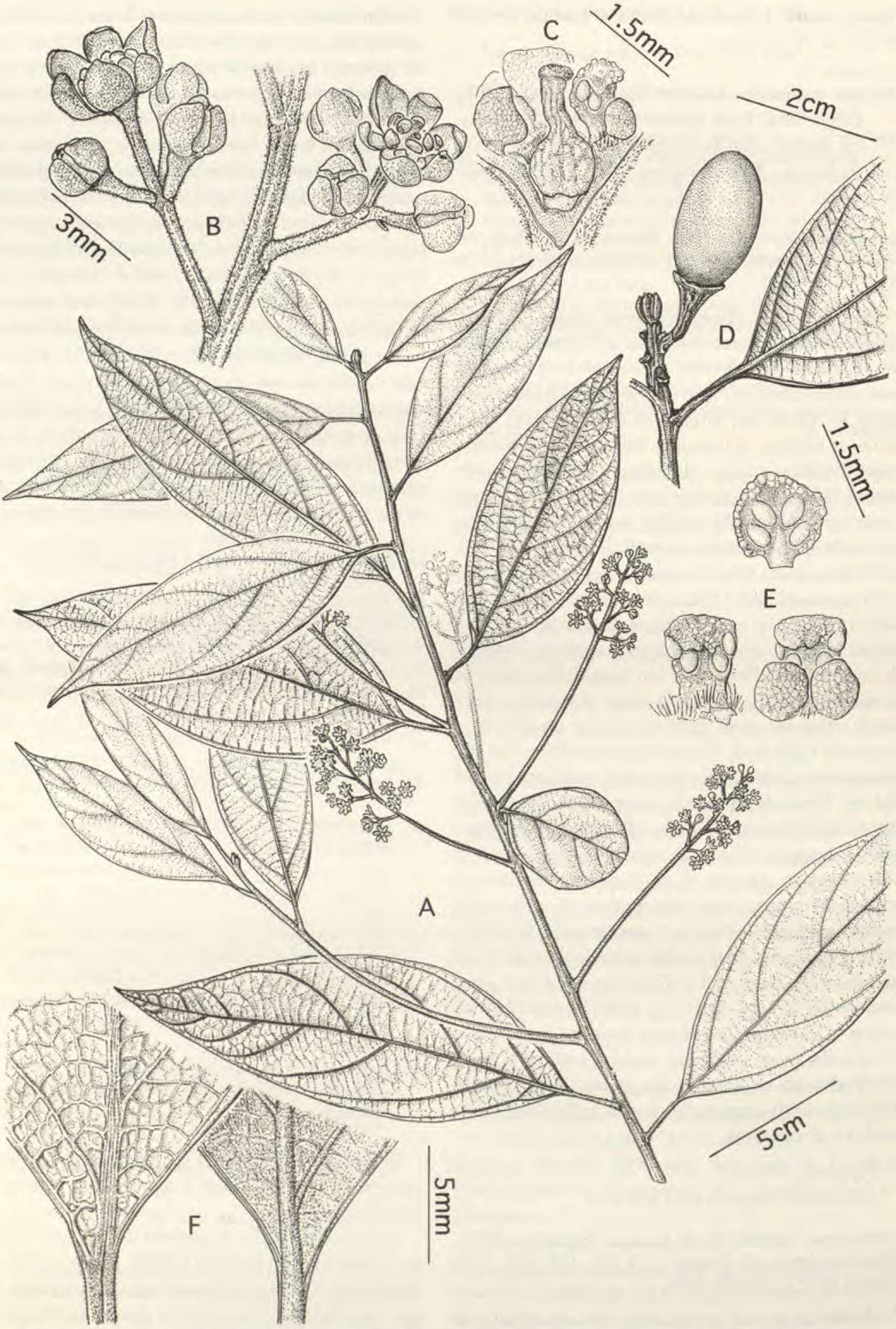

Figure 2. *Ocotea rufescens* van der Werff. —A. Habit. —B. Detail of inflorescence. —C. Flower in cross section. —D. Fruit. —E. Stamens. —F. Leaf bases showing venation and indument.

Ocotea salvadorensis (Lundell) van der Werff, comb. nov. Basionym: *Nectandra salvadorensis* Lundell, Wrightia 4: 105. 1969. *Phoebe salvadorensis* (Lundell) Lundell, Wrightia 5: 344. 1977. TYPE: El Salvador. Dept. Santa Ana: cloud forest near summit of Cerro Monte Cristo, *P. H. Allen 7173* (holotype, LL; isotypes, GH, NY).

Ocotea salvinii Mez has been included in *Phoebe* or *Cinnamomum* as well, for instance by Rohwer (1986). His opinion was solely based on the type, which has only immature flowers. Recent collections from Chiapas have flowers and fruits and indicate the species belongs in *Ocotea*.

Ocotea multiflora van der Werff, sp. nov. TYPE: Costa Rica. Puntarenas: Reserva Forestal Golfo Dulce, *Aguilar 791* (holotype, MO; isotypes, BM, CR, INB, MEXU).

A congeneribus centrali-americanis foliis multinervibus floribusque parvis recedit.

Tree, to 45 m tall. Twig slender, angular, glabrous or nearly so, lenticellate. Terminal buds slender, white appressed pubescent. Leaves alternate, chartaceous, 6–9 × 1.5–3 cm, (narrowly) elliptic, the base inrolled, cuneate and slightly decurrent on the petiole, the apex bluntly acute, gland dots readily visible on the lower leaf surface of flowering specimens, less visible in fruiting stage, upper leaf surface glabrous, lower surface glabrous or with some appressed hairs, especially along midrib, when young; lateral veins 12–17, these, midrib, and tertiary venation weakly raised on lower surface, immersed on upper surface; domatia absent. Petioles poorly differentiated from the leaf base, 4–7 mm long, glabrous or with a few appressed hairs. Inflorescences in axils of leaves, 6–10 cm long, paniculately cymose, many-flowered, the basal 3–5 cm unbranched, almost glabrous at the base, but toward the flowers progressively more puberulous, the hairs short, ± spreading, bracts lacking at anthesis. Flowers white, tepals 6, equal, ± erect at anthesis, pubescent on both surfaces, the hairs ± erect, ca. 1 mm long; stamens 9, 4-celled, the outer with introrse cells, anthers sessile or nearly so, 0.8–1.0 mm long, dorsally with some erect, curled hairs, inner 3 stamens with extrorse cells, 1 mm long, filament distinct, ca. 0.2 mm long, filament and base of anther with some long, erect hairs, 2 globose glands present at the base of the filaments; staminodia 3, threadlike, 0.6 mm long, pubescent; pistil glabrous, 2 mm long, style ca. 0.5 mm long; receptacle deep, glabrous inside, constricted near apex, flower inside densely pubescent at insertion of stamens and tepals. Fruits ellipsoid, 2 × 1.2 cm, pedicel swollen in fruiting stage, cupule small, plate-like, the margin entire and single.

Phenology. Flowers: December–February; fruits: April–May.

Ocotea multiflora is known from ten collections, all made on the Osa Peninsula. Of those, I have not seen *Burger 12377*, but this collection is the same species as *Burger et al. 12376*, a sterile juvenile tree. Vegetatively, *O. multiflora* is characterized by its rather small, elliptic leaves with many lateral veins and a slightly decurrent leaf base, and its slender, appressed pubescent terminal buds. It has, for *Ocotea*, very small flowers and a deep receptacle, which is not common among Central American species of *Ocotea*. I cannot suggest a close relative of *O. multiflora*. The fact that it grows into a very tall tree (on three collections it is described as 45 m tall) and has small flowers explains why it has not been collected and described earlier. It is included in the *Flora Costaricensis* (Burger & van der Werff, 1990) as *Ocotea* sp. B.

A very unusual feature of the two fruiting collections is that the fruit is seated obliquely on the small cupule. Young, immature fruits have the normal, symmetrical position in respect to the cupule. I checked a few of the obliquely seated fruits, but found no signs of disease or insect damage; the cotyledons were normally formed and showed no signs of damage. Thus, it may well be that the fruits take an oblique position in respect to the cupule during maturation, but if so, this would be the first example of such a fruit position I have seen among Lauraceae.

Paratypes. COSTA RICA. **Puntarenas:** Parque Nacional Corcovado, *Kernan & Phillips 906* (CR, MO, USJ); *Kernan & Phillips 1145* (CR, MO, USJ); *Aguilar 3021* (CR, INB, MO); *Aguilar 3135* (CR, INB, MO); Puntarenas, Osa Peninsula, Reserva Forestal Golfo Dulce, *Hammel & Robles 16725* (CR, F, MO); *Aguilar 2969* (CR, INB, MO); *Burger et al. 12376* (MO); Cantón de Osa, Aguabuena, *Herrera 4845* (CR, MO).

Ocotea tonduzii Standley

Because the name *Ocotea tonduzii* has been applied to several species, I will briefly review its history and try to clear the confusion surrounding this name.

Ocotea tonduzii Standley is a new name for *O. cuneata* Mez, non (Grisebach) Gómez, and has two syntypes, *Tonduz 1739* and *2142*, both in BR and which I have seen. Allen (1945) included in *O. tonduzii* a syntype of *O. ira* Mez & Pittier (*Tonduz 10415*, BR), and because the syntypes of *O. ton-*

duzii were not available to her, she used the name *O. tonduzii* in the sense of *O. ira*. Rohwer (1986) studied the syntypes of *O. tonduzii* and recognized it as a valid species, distinct from *O. ira*. Burger and van der Werff (1990) regarded *O. tonduzii* and *O. ira* as closely related and included them in their concept of *O. insularis* (Meissner) Mez, and thus largely accepted the concept of Allen. I have recently studied the syntypes of *O. tonduzii* and agree with Rohwer's concept of recognizing *O. tonduzii* as a distinct species. Diagnostic for *O. tonduzii* are the densely ferruginous-tomentellous flowers, the long terminal buds that are basally glabrous and appressed pubescent in the distal half, and the glabrous leaves with raised venation on both surfaces. Although *O. tonduzii* resembles *O. ira* in leaf shape, the latter lacks the raised venation, has smaller, pubescent terminal buds, and lacks a ferruginous indument on the flowers. The cupule of *O. tonduzii* is shallowly cup-shaped, 6–8 mm diam., and the green (probably immature) fruits are ellipsoid and ca. 1 cm long.

Specimens belonging to *O. tonduzii* have been cited as follows: Allen (1945) placed *Skutch 3755* in *O. skutchii* Allen; it is a paratype of, but is not conspecific with, *O. skutchii*. Five collections that I place in *O. tonduzii* were all cited in Burger and van der Werff as *O. endresiana* Mez, including an unrecognized syntype (*Pittier 1739*) in CR. I have not seen the type of *O. endresiana*, but according to the original description, *O. endresiana* has glabrous flowers and is thus distinct from *O. tonduzii*.

All names incorrectly associated with *Ocotea tonduzii* (*O. endresiana*, *O. insularis*, *O. ira*, and *O. skutchii*) belong to the *Ocotea insularis* group. The question of how many species should be recognized in this group and the proper placement of the specimens incorrectly included in *O. tonduzii* requires further study. An inconspicuous, but apparently reliable character for all species of this group is the presence of a small tuft of short, white hairs at the point where the filament of the third whorl of stamens widens into the anther, but only on the side facing the pistil. Such tufts of hair are lacking in *O. tonduzii*.

Ocotea tonduzii is rarely collected. Apart from the syntypes, I have seen three collections from the vicinity of Vara Blanca (*Skutch 3755*, *Wilbur 21726*, and *Hammel & Grayum 14086*), one from the Río Zurqui (*Grayum & Sleeper 6141*), and a sterile collection from Monteverde (*Wheelwright 165*). It occurs between 1500 and 2000 m; flowering collections were made in July and August.

Ocotea praetermissa van der Werff, sp. nov. TYPE: Costa Rica. Prov. Cartago: SW slope of Volcán Irazu, 2600 m, *Burger et al. 12065* (holotype, MO; isotype, F).

Ex affinitate *O. helicterifoliae* (Meisner) Hemsley et specierum affinium foliis parvis, puberulis, domatiis praeditis inflorescentiis floribusque (sub)glabris distinguenda.

Shrubs to medium-sized trees, to 15 m tall. Twigs terete, densely tomentellous when young, becoming glabrous with age. Terminal bud densely pubescent. Leaves alternate, chartaceous, elliptic or obovate-elliptic, 3–10 × 1.5–4 cm long, base acute or infrequently obtuse, apex acute or obtuse, lateral veins 3–6, venation immersed or weakly raised on upper surface, prominently raised on lower surface, upper surface glabrous or nearly so, lower surface (sparsely) pubescent, the hairs predominantly erect, the indument denser on the main veins, axillary tufts of hairs frequently present. Petioles 5–12 mm long, with a similar indument as the twigs. Inflorescences axillary, to 12 cm long, glabrous or with some scattered hairs, racemose (when short) to paniculate. Flowers yellowish, glabrous, 5–7 mm diam. Tepals 6, 2–2.5 mm long, equal, on the inner surface with some hairs near the base and the distal part (especially near the margin) papillose; stamens 9, all 4-celled, the outer 6 with introrse cells, the inner 3 with the lower pair extrorse and upper pair lateral; filaments of inner stamens with 2 glands near the base; staminodia usually present, 3; pistil glabrous, with a conspicuous, often lobed stigma. Fruit ellipsoid, 2.5 × 1.8 cm, cupule a very shallow cup, ca. 1.3 cm diam.

Phenology. Flowering specimens have been collected in February, March, May, June, and September.

Ecology. This species occurs in cloud forest, mostly between 2000 and 3200 m, but occasionally at lower altitudes. *Haber 10668* was collected on an exposed ridge at only 900 m.

Ocotea praetermissa corresponds with the concept of *O. pittieri* (Mez) van der Werff in Burger and van der Werff (1990). Rohwer (1991) concluded, after studying the type, that the name *O. pittieri* had been misapplied and that *O. pittieri* sensu typi is very closely related to *O. brenesii* Standley or synonymous with it. The most obvious difference between *O. praetermissa* and *O. pittieri* is that the latter lacks the erect pubescence on the lower leaf surface. *Ocotea praetermissa* also has narrower leaves than *O. brenesii*.

Ocotea praetermissa belongs to the *O. helicterifolia group*. Characteristic for this group are the erect indument on twigs and leaves, tepals with pa-

pillose apex and/or margin, and bisexual flowers. Several species in this group have relatively large staminodes and have been described in *Phoebe;* others were described in *Ocotea* and *Nectandra.* Species in this group are not well understood and are in need of a modern treatment.

Paratypes. COSTA RICA. **Puntarenas:** *Davidse et al. 28547* (MO), 28551 (MO), *Haber 10668* (MO), *Hammel & Neprokoeff 15056* (MO). **Alajuela:** *Austin Smith H679* (MO); *Bello 2839* (MO). **Cartago:** *Carlson 3585* (MO), *Bernardi 10626* (MO), *Almeda 3762* (MO), *Morales et al. 436* (MO), *Taylor 4460* (MO), *Williams & Molina 13888* (MO). **Heredia:** *Rivera 32, 131,* and *260* (all MO), *Varela 60* (MO). **Limón:** *Davidse et al. 28627, 28809,* and *28922* (all MO). PANAMA. **Bocas del Toro:** *Antonio 1602* (MO). **Chiriquí:** *Hammel et al. 7013* (MO).

The following collections differ somewhat from my concept of *Ocotea praetermissa* and may belong to different species: *Tucker 1001* (San Salvador): inflorescences and pedicels shorter than in *Ocotea praetermissa,* but likely to be that species. *Aranda 2247, 1261, 1265,* and *1317; van Hagen 2022, 2031,* and *2070* (Panama): inflorescences densely pubescent and rather short. This may well be an undescribed species. *Haber 4526, 4637,* and *4671* also have pubescent, few-flowered inflorescences like the Aranda and van Hagen collections from Panama.

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